DOCUMENT RESUME

ED 043 352 LI 002 144

AUTHOR Putnam, William
TITLE Problems and Issues in Sprecifying Behavioral Instructional Objectives for Graduate Courses in Library Administration.
PUB DATE Oct 70
NOTE 46p.; A Dissertation Submitted to the Faculty of the Department of Library Science of the Catholic University of America in Partial Fulfillment of the Requirements for the Degree of Master of Science in Library Science

EDRS PRICE EDRS Price MF-$0.25 HC-$2.40
DESCRIPTORS *Administration, Adult Education, *Behavioral Objectives, *Graduate Study, *Librarians, Libraries, *Library Education

ABSTRACT

The theory of behavioral instructional objectives is applicable in the design of library administration courses; however, it does give rise to a number of problems when so applied. Chief among these is that the theory of behavioral instructional objectives has been elaborated by pedagogues so that the theory is not, understandably, uniformly applicable to adult education. The twofold purpose of this report is to bridge the communication gap between educational researchers and those at work designing library administration courses for the continuing education of librarians, and to discuss the problems that arise when educational research findings are applied to library education. It was concluded that the application of the theory of behavioral instructional objectives to adult leaners by those developing graduate library administration courses might lead to a significant modification and broadening of the scope of the theory as it now stands. Moreover, the field of library education stands to benefit from the application of the theory to library administration courses by stimulating the production of highly valuable teaching materials such as case studies and simulation studies. (NH)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED043352

PROBLEMS AND ISSUES IN SPECIFYING BEHAVIORAL INSTRUCTIONAL OBJECTIVES FOR GRADUATE COURSES IN LIBRARY ADMINISTRATION

BY

WILLIAM PUTNAM

A DISSERTATION SUBMITTED TO THE FACULTY OF THE DEPARTMENT OF LIBRARY SCIENCE OF THE CATHOLIC UNIVERSITY OF AMERICA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN LIBRARY SCIENCE

OCTOBER 1970

Washington, D. C.

LT 002144

TABLE OF CONTENTS

	Page
INTRODUCTION	1
Chapter I	8
Chapter II	14
Chapter III	25
Chapter IV	29
SUMMARY	36
BIBLIOGRAPHY	39

INTRODUCTION

A survey of the literature of librarianship shows that the twin themes of continuing education for librarians and the status of librarians as professionals are closely interlinked. The relationship is this: continuing education is viewed as a means whereby librarians holding the Master of Science in Library Science degree might attain true professional status. The problem is this: to date opportunities for continuing education have been, by and large, inadequate. To remedy the situation some library school educators are embarking upon research programs to develop continuing education courses--especially in administration --for librarians already holding the Master of Science in Library Science degree.

One such research project is being conducted by the Research Office in the Department of Library Science at The Catholic University of America. The purpose of this research project is, very broadly, to develop courses in library administration and in automation of library services and information retrieval designed specifically for practicing librarians already holding the Master of Science in Library Science degree and wishing to upgrade their status as professional librarians. The project consists of three distinct phases. Phase I of the project, now completed, established a broad data base through the use of questionnaires and interviews

for the determination of what courses (what subject areas) were to be developed.[1] Phase II, now in progress, will develop model courses (one in Library Administration and Human Relations, one in Automation of Library Services, and, possibly, a third course). In keeping with the latest findings of educational research, the project research team will develop the model courses by using the systems approach; the team will begin by first specifying behavioral instructional objectives for the courses and then will proceed to the construction of a course syllabus, a teacher's guide, training aids, a bibliography, and a plan for the use of multi-media materials. Phase III of the project will involve: (1), classroom testing and evaluation of the model courses developed in Phase II; (2), appropriate revision of the model courses in the light of (1); and, (3), subsequent preparation of the revised courses in publishable form so that they can be "packaged" and offered at library schools elsewhere. As more and more library schools use these "packaged" courses, their evaluations will be used for further revision of the courses on a systematic basis.

The American Library Association will soon publish the final report of Phase I under the title, Post-Master's Education For Middle and Upper-Level Personnel in Libraries and Information Centers. With the exception of this report, still to be published, no published research treating continuing education for librarians

---

[1]James J. Kortendick and Elizabeth Stone, "Highlights of a Study on Federal Librarians and Post-MLS Education," DC Libraries, XL (Fall 1969), 73-74.

makes any mention of the need to use systems analysis and behavioral instructional objectives in the development of continuing education courses for librarians. There appears to be a serious lack of communication between educational researchers and those writing about continuing education for librarians. Those publishing in the field of library science on the subject of continuing education are apparently unaware of the recent valuable educational research on behavioral instructional objectives and the applicability of systems analysis to educational planning, and, as a result, can not and are not taking advantage of it.

It is the purpose of this research paper, therefore, to bring together conveniently in one place information about continuing education for librarians (especially in administration) and information about educational research concerning behavioral instructional objectives and the application of systems analysis to educational planning with a view to indicating how educational research can be of value to researchers developing continuing education courses in librarianship. To be more specific, the central aim of this research report is to discuss in what ways the theory of behavioral instructional objectives as now elaborated can be applied right now without alteration to the development of graduate courses in library administration, and to point out those problem areas where the theory may have to be adapted, or even, ultimately fundamentally changed, to be applied successfully to graduate courses in library administration.

Chapter I of this report surveys and summarizes in brief compass the literature of librarianship concerning continuing

education in relation to professionalism and the literature of educational research about behavioral instructional objectives and systems analysis. The chapter's footnotes to items in the Bibliography are intended to serve as a selective guide to the wealth of material published on these subjects.

Chapter II analyzes the definition of the concept of behavioral instructional objectives and develops the implications for educational planning--especially in relation to the subsequent feasibility of systems analysis--that grow out of the definition. In discussing these matters, the author uses examples drawn from the subject matter of library administration. Throughout the chapter major emphasis is placed upon the form of behavioral instructional objectives.

Chapter III presents a definition of systems analysis in terms intelligible to the non-specialist. The chapter's footnotes to the Bibliography are intended to lead the unitiated reader to those articles of most value to someone seeking an introduction to the subject of systems analysis in educational planning.

Chapter IV confronts the theory of behavioral instructional objectives, developed by educationists, with the subject matter of library administration. The chapter explores those areas in which the greatest accommodation is needed in order to apply the theory to graduate courses in library administration. These are the problems and issues mentioned in the title of this report.

The paper concludes with a brief summary followed by the Bibliography.

To conclude this introduction, it might be well to mention briefly the main assumptions underlying this report. First of all, it is assumed that educational research about the specification of behavioral instructional objectives is applicable to the design and construction of graduate courses in library administration. Research done by the Graduate School of the US Department of Agriculture has shown that the theory of behavioral instructional objectives is indeed valid when applied to adult education courses in various subject areas.[2] In this regard, one might also mention Martin Taft's stimulating article, "Design For Education" in Engineering: A Look Inward and a Reach Outward, edited by J. A. Reisman, published by the University of Wisconsin Press in 1967.

Secondly, it is assumed that the specification of behavioral instructional objectives for graduate courses in library administration is only the first step in planning and as such can make only a small, albeit very valuable, contribution to the ultimate goal: upgrading the library profession. Stated bluntly, specifying behavioral instructional objectives for graduate courses in library administration is not a panacea.

Thirdly, a survey of the literature shows that there are those who feel quite strongly that library administration should not be taught in library schools.[3] Nevertheless, the author of

---

[2]See: Graduate School of the US Department of Agriculture, Faculty Handbook, Part II, Improving Teaching (Washington, D.C.: Department of Agriculture Graduate Schools, 1967). ERIC ED 024 854.

[3]Lettie G. Carson, "Remarks at the American Library Trustee Association Meeting, Region VII," paper delivered at the

this report finds such opinions quite unconvincing. It is assumed for the purposes of this report that administration very definitely belongs in the library school curriculum both at the Master's level and continuing education level.

Fourthly, it is assumed that there is a core curriculum in library administration about whose content there is very broad agreement. Howard's and Stone's writings[4] furnish the topics taken up in Chapter IV. In this report the objectives are assumed as given; what is at issue is the form of the statement of the objectives. The question becomes: given the objectives growing out of the core curriculum for library administration, what difficulties arise when one tries to specify them in behavioral terms for courses seeking to develop professionals?

Fifthly, and finally, it is assumed that the dichotomy, insisted upon by some teachers, between theory and practice of administration is false when applied to graduate courses aimed at developing professionalism. It is assumed that education aimed at developing professionalism is vitiated if tied down to job-related tasks solely. The professional librarian must appreciate the subtle and dynamic interplay between the theory and practice

---

ALTA Annual Conference, San Francisco, Calif., June 25, 1967. (Mimeographed); Daniel Gore, "The Mismanagement of College Libraries," AAUP Bulletin, LII (March, 1966), 46-51; Lowell A. Martin, "Shall Library Schools Teach Administration?" College and Research Libraries, VI (September, 1945), 335-340.

[4]See: Paul Howard, "The Functions of Library Management," Library Quarterly, X (1940), 313-349; and, Elizabeth Stone, Training for the Improvement of Library Administration (Ann Arbor, Mich.: Edwards Bros., 1967).

of administration. To quote the Faculty Handbook:[5]

> But when you are educating for a profession, as Tyler points out, you are dealing with an occupation in which the specifics can not be laid down because new problems arise and new knowledge becomes available to deal with these problems. Then the question is: what is it that an adult student can learn that will enable him to be effective in new situations?

In this report, it is assumed that the answer to the question posed above is that a true professional finds a knowledge of theory indispensable, yet that alone is not enough. Certainly, everyone can think of cases in which students who made A's in library administration courses in library school turned out to be poor administrators in practice on the job. No, the relation between theory and practice is a very subtle one; the relation between theory and practice should not be thought of as an either/or dichotomy. The assumption, then, is that professional education can ill afford to neglect either practice or theory because the hallmark of the true professional is the ability to <u>apply</u> the right <u>theory</u> in <u>practice</u>.

---

[5]Graduate School of US Department of Agriculture, <u>Faculty Handbook</u>, 28.

Chapter I

In the recent past a great deal of educational research has been devoted to the subject of the specification of behavioral instructional objectives. Any listing of those researchers who have published important contributions toward a theory of behavioral instructional objectives would certainly include at least the following writers (listed here in alphabetical order): B. S. Bloom, L. J. Briggs, R. M. Gagne, E. Galanter, D. R. Krathwohl, C. M. Lindvall, R. F. Mager, W. H. Melching, G. D. Ofeish, R. G. Smith, R. W. Tyler.[6]

Mager's writings, especially his Preparing Instructional Objectives, a cogently argued and wittily written programmed text on the subject, have been perhaps the most influential works in disseminating the theory of behavioral instructional objectives. Ralph W. Tyler, whose seminal ideas on instructional objectives date back to the 1930's, is recognized as a pioneer in stressing the importance of clearly specified instructional objectives.[7] Yet it was not until the appearance of Mager's book entitled Preparing Instructional Objectives in 1962 that instructional

---

[6]For complete bibliographical identification of their most important publications, consult the bibliography.

[7]C. M. Lindvall, ed., Defining Educational Objectives (Pittsburgh: University of Pittsburgh Press, 1964), 3.

objectives became the major topic of educational research that they deserve to be.

If Tyler's fellow educational researchers neglected his work for so long a period, then there should be little cause for surprise--though great cause for concern--to learn that the academic community at large is to this day generally unaware that a theory of behavioral instructional objectives has been undergoing rapid and intensive development at educational research centers since the early 1960's. As a consequence, those charged with curriculum development and course design in departments outside the schools of education are still by and large unaware of the theory. As a result, the theory goes untried and untested in a great many situations in which, were it to be applied, more valuable data would quite likely be obtained for the further elaboration of the theory by making it applicable to as many subject matters as possible.

At the same time that a theory of behavioral instructional objectives has been evolving (since the early 1960's), departments of library science across the United States and Canada have been engaging in serious discussion about whether departments of library science are meeting their primary responsibility for librarianship: the education of professional librarians. Forty per cent of the items listed in the bibliography address, in one way or another, the question of the adequacy of present Master of Science in Library Science curricula in this regard. A survey of the literature shows that the concensus is that departments of library

science do fall short of reaching this goal. Mary Bundy makes this characteristic observation about the matter: "The real indictment of library schools is that they are not inculcating in their graduates a sense of profession, a commitment--even a sense of mission--without which they will not have the capacity to shape the future of librarianship."[8]

The relationship between departments of library science and the future status of librarianship as a profession was clearly and succintly expressed by Edward A. Wight, who said that the departments of library science have "the professional responsibility for the progress of librarianship itself and for the development of the stature and status of librarians."[9]

However, there are others who would be quick to add that this responsibility cannot be fully discharged <u>solely</u> within the one year Master of Science in Library Science curriculum. Cyril Houle, professor of education at the University of Chicago, sees the solution in continuing education, responsibility for which should be distributed between what he calls "five centers of influence" for continuing education: the individual, the informal group, the employing institution, the university, and the professional association.[10]

---

[8]Mary Lee Bundy, "On Library Education," <u>Maryland Libraries</u>, XXXII (Spring, 1966), 23.

[9]Edward A. Wight, "Standards and Stature in Librarianship," <u>ALA Bulletin</u>, LV (November, 1961), 875.

[10]Cyril O. Houle, "The Role of Continuing Education in Current Professional Development," <u>ALA Bulletin</u>, LXI (March, 1967), 266.

On the other hand, there are those who regard such a distribution of responsibility for the continuing education of librarians as a weakness. Samuel Rothstein comments that "continuing professional education is essentially a peripheral activity within librarianship. It is the central responsibility of no one agency within our field and it has no organization to see to its planning and rational development."[11] It appears now that more and more librarians are coming around to Rothstein's view. For example, writing in the June 1970 issue of American Libraries, E. Stone presents a strong case for the establishment of a national bureau for continuing education in librarianship.[12]

It is clear that one thing that Bundy, Wight, Houle, Rothstein, and Stone would all agree on is that in the future departments of library science will have to assume more active leadership in providing for the continuing education of the members of the library profession. Accordingly, a survey of the literature shows that some departments of library science are now beginning to experiment to develop special courses, workshops, and institutes--especially in library administration--beyond the Master of Science in Library Science level for the continuing education of librarians.[13] Yet a survey of the literature shows

---

[11]Samuel Rothstein, "Nobody's Baby: A Brief Sermon on Continuing Professional Education," Library Journal, XC (May, 1965), 2226.

[12]Elizabeth W. Stone, "Continuing Education in Librarianship: Ideas For Action," American Libraries, I (June, 1970), 551.

[13]For example, see the items by Byrd, Harlow, Kortendick, Ramey, Ready, Sharify listed in the Bibliography.

that behavioral instructional objectives were not specified for these experimental courses, workshops, institutes, and seminars. Moreover a check of the index, Library Literature, reveals that, although much has been written on the subject of continuing education, nothing has been published on the use of behavioral instructional objectives in the development of continuing education courses in librarianship. In other words, those publishing in the field of library science on the subject of continuing education are apparently not aware of the recent educational research on behavioral instructional objectives and as a result cannot take advantage of it.

Much the same situation obtains with respect to the use of systems analysis in the development of courses for continuing education in librarianship. Proponents of the use of systems analysis in educational planning are becoming more and more numerous; yet a survey of the literature dealing with the development of courses for continuing education in librarianship shows that not once is mention ever made of the relevance or usefulness of systems analysis in planning courses for continuing education in librarianship.[14]

When an educational plan is viewed as a system, the instructional objectives specified are seen as a component determining certain other components in the system such as the media

---

[14]For orientation in the subject of systems analysis and educational planning, consult the items by Briggs (2), Cook (3), Knezevich, Ofeish, Reisman, and Taft listed in the Bibliography.

to be used, the method or methods of instruction to be used, and the kinds of student, course, and teacher evaluation. It follows, therefore, as Knezevich has remarked, that before systems analysis can be applied to educational planning, "educational objectives that are specified in performance terms (behavioral instructional objectives) must be given."[15]

It is hardly surprising, then, that systems analysis has not been mentioned in the publications describing experimental courses in continuing education for librarianship; the courses were designed without the aid and benefits of behavioral instructional objectives. And without clearly specified instructional objectives (preferably in behavioral terms) it is impossible to begin systems analysis. Put differently, the neglect of specification of instructional objectives perforce precludes the use of systems analysis.

Hence, a strong case can be made in support of the application of the theory of instructional objectives solely on the purely utilitarian grounds that failure to apply the theory rules out the possibility of later using systems analysis and thereby eliminates from planning the many benefits of systems analysis.

---

[15] S. J. Knezevich, "The Systems Approach to School Administration: Some Perceptions on the State of the Art" (paper delivered at Symposium on Operations Analysis of Education, November, 1967), 3. ERIC ED 025 853.

Chapter II

Recent educational research concerning behavioral instructional objectives would be of inestimable value even if, after all the research has been examined and assessed, it should turn out to be the case that instructional objectives stated in behavioral terms represent no significant improvement over the traditional statements of objectives, if only because of the great interest the research has generated in objectives per se. It would not be untrue to say that thinking about objectives is always of value, for objectives are the touchstone of <u>achievement</u> - the raison d'etre of education. Achievement of goals is what gives all of education from the cradle on through continuing education for adults its focus and direction by providing the fundamental <u>motivation</u> underlying education: the sense of satisfaction derived from increasing one's behavioral repertoire through learning. Objectives are milestones posted along the road of educational achievement.

Any serious discussion of educational objectives, sooner or later, and quite naturally so, leads into a discussion of the philosophy of education. He who has examined educational objectives with the sharp, analytical tools of philosophical thought is the more clearsighted for having done so. But is he necessarily a better instructor? The point here is: <u>for whom</u> are <u>instructional</u>

objectives intended? Put differently, are objectives, stated in the philosopher's speculative terms, well suited for the instructor's purposes too?

The answer to the first question is: No, not necessarily so. To the second the answer, clearly, should be: For the students. To the third question modern research replies: Very often, unfortunately, they are not.[16]

The most innovative contribution recent educational research has made to the study of objectives is to show that objectives, traditionally part and parcel of educational philosophy, should now come under the scrutiny of educational psychology as well. Research has shown that objectives can be fruitfully studied, from the behavioral point of view as well as from the philosophical.[17] In other words, educational objectives hammered out during long and arduous seminars on the philosophy of education need to be translated into behavioral terms before they can be effectively used as instructional objectives in the classroom.

Modern research, then, has added a refinement to the study of objectives. Whereas objectives were formerly the sole province of educational philosophy, a distinction is now drawn between educational objectives (philosophy) and instructional objectives (psychology). Moreover, a further distinction is made;

---

[16]Robert F. Mager, Preparing Instructional Objectives (Palo Alto, Calif.: Fearon Press, 1962), 2-8.

[17]Ibid., pp. 3-10, passim.

within the class of instructional objectives there is a subclass known as behavioral instructional objectives. These are, according to Mager[18] and others, behavioral, instructional objectives by virtue of the form of the statements expressing them.

What are the formal features characterizing behavioral instructional objectives? Mager[19] defines behavioral instructional objectives as objectives which are stated in such a form that they exhibit all three of the following features:

1) identification of the student's terminal behavior;

2) specification of the conditions (restrictions), if any, under which the student must show he has added to his behavioral repertoire the terminal behavior identified in 1); and

3) specification of the criteria which the student's terminal behavior must meet in order to be deemed acceptable.

The words underlined in the above paraphrase of Mager's definition of behavioral instructional objectives need further comment before the full implications of his definition can be brought out fully.

First of all, "terminal behavior" here means what the student will be able to do by the end of the course to be accepted as proof that the desired change in his behavioral repertoire has indeed taken place. For example, if the educational goal in question were:

---

[18] Ibid., pp. 2-47.

[19] Ibid., p. 52.

"To learn the terminology used in administration,"

then to transform it into a behavioral instructional objective, one would have to, among other things discussed below, rewrite it to specify the terminal behavior thus:

> "To be able to give a written definition of the terms used in administration...," or, alternatively,
>
> "To be able to match terms used in administration with their correct definitions...," or

some other similar statement. Notice that the ambiguous term "learn" has been replaced by the more specific "give a written definition" and "match terms with definitions." These words, then, remove part of the ambiguity inherent in the term "learn." In fact, regarding such ambiguity, Mager strongly recommends, if not outright avoidance of ambiguous terms such as "learn," "understand," "appreciate," etc., that they be used exceedingly sparingly and even then they should be explained with great care and in full detail.

Secondly, specification of the conditions, if any, to be imposed is a further step toward removing ambiguity from statements of objectives. For example, if the broadly stated educational goal were:

> "To be able to convert verbal and numerical data gathered from a library's annual report into a bar graph,"

then part of the ambiguity could be removed by specifying what, if any, mathematical handbooks could be consulted and how much time would be allowed. Rewriting the objective then, one would obtain, for example:

> "To be able to construct a bar graph from data presented in verbal and numerical form excerpted from a library's annual report within the time period of 45 minutes without the aid of any math handbooks...."

Again the underlined words specify something left unsaid in the original draft. They specify the time limit imposed and specifically rule out the use of mathematical aids. The objective, as now stated, specifies: 1) terminal behavior, and 2) the conditions imposed.

Thirdly, an objective, to be considered a behavioral instructional objective, in addition to identifying the terminal behavior and specifying the conditions imposed, must also specify the criteria that will be used to determine whether the student's performance is to be considered acceptable or not. For example, given the objective:

> "To be able to match terms used in administration with their correct definitions...,"

one must then proceed to specify criteria of acceptable performance of the terminal behavior by rewriting the objective, let us say, thus:

> "Given a list of terms used in administration and a list of their definitions in jumbled order, the student must be able to match at least 92% of the terms correctly with their definitions."

In this case, the student must make a score of 92% or higher for his performance of the terminal behavior to be rated as satisfactory.

From this discussion of the definition of behavioral instructional objectives it is possible to identify the advantages of stating objectives in behavioral terms. These advantages

can perhaps be best discussed under the following broad headings:

1) Communication,

2) Evaluation,

3) Course Design, and

4) Systems Analysis.

First of all, stating objectives in behavioral terms contributes substantially to better communication between the instructor and student by removing ambiguities (and thereby doubts and confusion on the student's part) about what the student must be able to do by the end of the course, under what conditions and how well to obtain a satisfactory grade or higher. Statements which describe course content or the topics the instructor will cover in class, however, are often offered as if they were the course objectives, or even, are offered in place of a statement of objectives. But, clearly, a description of course content which merely lists the topics to be taught does not answer questions about what the student must be able to do and how well and under what restrictions, if any. In fact, often it is the case that what an instructor presents to students as a set of objectives is nothing more than a course description. This unfortunate confusion of course descriptions with course objectives greatly hinders communcation between instructor and student. By using behavioral instructional objectives, the instructor can eliminate this confusion.

To make the point absolutely clear, suffice it to say that course descriptions for courses in American history do, by and large, list the same topics from seventh grade right on through

graduate school. Yet what a seventh grader is expected to be able to do (his objectives) at the end of his course is entirely different from what a graduate student is expected to be able to do at the end of his.

Secondly, and closely related to the matter of communication, is the matter of evaluation. The difficult problem of evaluation is of such great importance, however, that it is singled out here for separate discussion. As stated earlier, objectives are the milestones which make measurement of educational achievement feasible. The great value of stating objectives in behavioral terms with regard to the problem of evaluation is that, when properly specified, behavioral instructional objectives make evaluation at once objective and unambiguous. They do so by virtue of the fact that they specify, in addition to terminal behavior, criteria and conditions. In this way, both teacher and student know before the examination what is expected. In other words, both the construction of tests and the taking of tests are removed from the realm of the haphazard. Tests are constructed on a realistic basis in line with previously and unambiguously specified objectives so that students are no longer "in the dark," so to speak, at examination time. Put differently, by properly stating objectives in behavioral terms, the instructor can eliminate the problem that arises when students prepare for one kind of examination and the instructor gives another kind. For instance, if students are led to believe, rightly or wrongly, that on an examination they will be asked to match definitions of terms with terms, many will do poorly if asked to write out their own

definitions. This sort of problem does not arise when objectives are specified in behavioral terms.

Thirdly, a set of behavioral instructional objectives is of great help to the instructor faced with the task of designing a course. Suppose that one of the objectives before an instructor charged with designing a course in the principles of library administration were the following:

> Form A. "To gain an understanding of the principle known as span of control."

Clearly, this is merely a <u>topic</u> to be studied. As an objective it fails to specify any of the three factors required by Mager. But what is more, how can the instructor proceed with any degree of confidence to plan the sequence of instruction to achieve the objective?

If, however, the instructor knew the objective stated in behavioral terms, then he could begin to make reasonable decisions about the design of the course. For instance, it is not difficult to see that the two following forms of the objective are quite different from each other and therefore require different teaching strategies.

> Form B. "To be able, without the aid of class notes, to define in writing the term span of Control. Correct spelling, punctuation, grammar and diction must be observed as well as correctness of definition for a grade of C+ or higher."
>
> Form C. "Given two case studies, only one in which the principle of span of control is applicable, the student must be able to identify the case in which the principle is applicable, and to state how it could be applied to resolve the problem presented, and to explain why the principle is irrelevant in the other case."

In both B and C the instructor seeks evidence of "understanding of the principle know as span of control." Yet B and C differ radically from A; moreover, B and C are fundamentally different from one another. The difference between A, on the one hand, and B and C, on the other, is that A merely states a topic to be studied, whereas B and C are bona fide instructional objectives stated in behavioral terms. The fundamental difference between B and C is that each calls for a different kind of learning. That is to say, B calls for little more than the exercise of memory for a grade of C or below. Whereas C requires that the student learn to use his powers of discrimination and explanation as well as that he learn to recognize in what situations the principle is applicable. In short, learning the definition of a principle by rote and learning to apply that principle are two very different kinds of learning.

Information about what kind of learning the student is expected to do is indispensable when designing a course of instruction. Such information determines in large part the kind(s) of instructional method (lecture, discussion, field trips, individual research, laboratory, etc.), the media and the sequence of instructional units.[20]

It might be well to list here the different kinds[21] of learning now recognized, lest those readers possibly unversed in

---

[20]Leslie J. Briggs and others, Instructional Media (Pittsburgh: American Institutes For Research, 1967), 28-34.

[21]Ibid., p. 42.

educational psychology (and therefore unaware of the many different kinds of learning there are) should think there is little room to err in this respect. The following is Krathwohl's outline of Bloom's taxonomy of educational objectives.[22]

Knowledge:

- of specifics
- of terminology
- of specific facts
- of ways and means of dealing with specifics
- of conventions
- of trends and sequences
- of classification and categories
- of criteria
- of methodology
- of the universals and abstractions in a field
- of principles and generalizations
- of theories and structures

Intellectual Skills and Abilities:

- Comprehension
- Translation
- Interpretation
- Extrapolation
- Application
- Analysis:
  - of elements
  - of relationships.
  - of organizational principles.

---

[22]David R. Krathwohl, "The Taxonomy of Educational Objectives," in Defining Educational Objectives, edited by C. M. Lindvall (Pittsburgh: University of Pittsburgh Press, 1964), 22-28.

Synthesis:

Production of a unique communication
Production of a plan, or proposed set of operations
Derivation of a set of abstract relations

Evaluation:

Judgments in terms of internal evidence
Judgments in terms of external criteria.

Fourthly, and finally, well specified instructional objectives (preferably stated in behavioral terms) are needed before systems analysis of an instructional plan (course design, curriculum plan) can be initiated. For lack of properly specified instructional objectives systems analysis can be stultified from the very beginning. Hence, still another reason for specifying objectives in great detail is that systems analysis cannot be conducted when objectives have not been properly specified and consequently the advantages of applying systems analysis to educational planning cannot be realized. The benefits to be derived from the application of systems analysis to instructional planning is the subject of the next chapter.

Chapter III

It is possible that some readers may be unfamiliar with the subject of systems analysis, and, in that case, the full import of the fourth implication growing out of Mager's definition of behavioral instructional objectives (the last point discussed in Chapter II) may not be completely evident to them. This chapter is a brief excursus on systems analysis for such readers.

Desmond Cook, in discussing the relationship between systems analysis and educational planning, remarks:[23]

> The employment of system analysis and synthesis procedures offers a challenge and an opportunity to improve our planning effort. Such techniques force us to face up to the question of what exactly it is that we want to accomplish and how we intend to go about it. The specification of the objective and its subsequent analysis to identify the functions and tasks which have to be accomplished in order to reach the objective require us to use our logical skills to a very high degree.

In other words, in order to begin a systems analysis of a course design, the objectives must be properly specified. Put simply, then, specification of objectives is a prerequisite for systems analysis of a course design.

---

[23]Desmond L. Cook, The Use of Systems Analysis and Management Techniques in Program Planning and Evaluation, paper delivered at Symposium on the Application of Systems Analysis at Orange, California, June 12-13, 1967. ERIC ED 019 752, p. 27.

Thoroughly convinced of the validity of applying systems analysis to educational planning, Cook proposes:

> The basic premise (in planning)...is that the typical research, development, or engineering project in education can and should be fundamentally thought of as a system.[24]

The question now arises: what is systems analysis? Cook has succeeded admirably in defining systems analysis in terms easily intelligible to the layman. His excellent definition, quoted verbatim, follows:[25]

> System as used here refers primarily to the orderly (i.e., logical) arrangement of interdependent components or parts into a connected or interrelated whole to accomplish a specified goal. So defined, it is assumed that a system can be factored or resolved into a series of subsystems and each subsystem can be further factored or resolved.
>
> As for the meaning of analysis, it consists of operations that involve division, dissection, classification, partitioning, and similar actions.
>
> Combining our concepts of system and analysis, we can now define system analysis as that process of disassembling some objective oriented whole into its component parts.

The value, then, of applying systems analysis to educational planning is that systems analysis brings objectives into sharp focus for close analysis in relation to other components (such as kinds of learning, media used, kinds of instruction,

---

[24]Desmond L. Cook, Better Project Planning and Control Through the Use of Systems Analysis and Management Techniques, paper delivered at the Center for Educational Statistics, Washington, D.C., November 20, 1967. ERIC ED 019 729, p. 8.

[25]Ibid., p. 4.

kinds of evaluation) in the system. These interrelated components are not studied in isolation any longer; objectives are thought of as giving direction to the whole planning process. And this is as it should be since achievement of objectives, as stated earlier, is the raison d'etre of education. In short, the application of systems analysis to educational planning puts first things first. It requires that planning begin at the beginning with objectives.

These remarks may seem to belabor the matter unduly. However, Lindvall, in his introductory chapter in Defining Educational Objectives[26] argues strongly for emphasizing the matter over and over again without surcease, because despite all of the wide publicity recently lavished on educational research concerning planning there are still more than a few who do not begin plans at the beginning with objectives. All too many, Lindvall laments, still overlook the specification of instructional objectives and systems analysis as if Mager, Cook et al. had never published anything on those subjects.

Recent research by Briggs, Campeau, Gagne and May has shown that when applying systems analysis to course design, the best way to specify objectives is in behavioral terms.[27] They argue that objectives stated in behavioral terms provide a rational

---

[26]Lindvall, pp. 1-2.

[27]Briggs, pp. 1-5.

basis for making related decisions about methods of instruction, sequence of instructional units and choice of media. They write:[28]

> When stated in terms of human performance, objectives imply a requirement for certain types of learning... (such as)...concepts, principles, and problem solving. Each type of learning requires its own external conditions, which may be conceived of as a sequence of instruction, are in turn established by stimuli presented by various media. Each of the events (or steps) in this sequence may be accomplished by more than one medium.... When the designer makes...choices (about media), he is in a sense 'programming' the conditions for learning each objective of the course or course sequence.

To summarize this excursus and to recapitulate the concluding point of Chapter II, recent educational research has demonstrated that instructional planning should be done by first specifying instructional objectives in behavioral terms and then by proceeding to a systems analysis of the plan in making decisions about methods and sequence of instruction, choice of media in keeping with the terminal behavior and kinds of learning specified in the objectives. Instructional objectives specified in behavioral terms are an essential prerequisite for systems analysis since they make it possible to analyze the interrelations (systems concept) between: (1) objectives and kind of learning, (2) kind of learning and methods of instruction, (3) between (2) and choice of media, (4) between (1), (2), (3) and test construction and student evaluation.

---

[28] Ibid., pp. 29-30.

Chapter IV

In this chapter it is presumed that by now the reader is familiar with the theory of behavioral instructional objectives and with the content objectives (topics included) of the core curriculum in library administration.[29] Our purpose now is to consider what problems arise when one attempts to specify objectives in behavioral terms for graduate courses in library administration designed to meet the continuing education needs of practicing librarians seeking to achieve truly professional status.

First of all, let us consider to what subject areas the theory of behavioral instructional objectives has already been applied. Generally, the theory has been studied and tested by educational researchers interested in pedagogy rather than in adult education.[30] Moreover, the theory of behavioral instructional objectives has been applied mainly to the teaching of the sciences (algebra, anatomy, arithmetic, biology, chemistry, electronics, logic, physics, slide rule computations) and foreign languages.[31] It is not difficult to see why the sciences (including mathematics) have received so much attention from Gagne,

---

[29] Stone, Training.

[30] Briggs, Gagne, Galanter, Lindvall, Mager, and Melching, to mention a few, are concerned primarily with children.

[31] Mager, Preparing, pp. 3, 4, 6, 9-14, 17, 24, 26, 32-33, 37, 39, 42-49.

Mager and others. The subject matter and the kinds of learning involved in courses in these subjects are such that they lend themselves rather naturally to the statement of behavioral objectives. That is to say, before a pupil receives instruction in, let us say, linear algebra, he is unable to solve first degree equations; upon successful completion of the course in linear algebra the pupil is able to solve equations of the first degree. The pupil is, in a very real sense, able to do something that he was unable to do before. On the other hand, it is likewise not difficult to see why courses in subjects such as music appreciation and poetry appreciation, for example, have not received the attention of researchers interested in the specification of behavioral instructional objectives. For unlike the sciences, such courses do not lead to any overt, easily identified and specified terminal behavior. That is to say, it is not yet clear what, if anything, a pupil <u>does</u> upon completion of a course in music appreciation that he was not doing before he took the course.

Now let us turn to the question of how much of the content (set of topics) in the core curriculum in library administration can be meaningfully translated into behavioral instructional objectives. In other words, is the subject matter of library administration such that it can be said that upon successful completion of a course in library administration the student is able to do something that he was unable to do before? Put differently, are there clearly distinguishable terminal behaviors that can be identified in library administration?

If equal time were to be devoted to the topics of directing, planning, controlling, coordinating, reporting (which includes here budgeting and communication), staff development and architecture, then roughly 80% of the course material would in principle be amenable to behavioral analysis. This estimate is based on the fact that certain techniques or approaches cut across all of the topics listed above. Those techniques or approaches are: planning (itself a topic), decision making, systems analysis, leadership, and human relations. Of these, the first four are in principle amenable to behavioral analysis. But the last approach may prove to be far less amenable to behavioral analysis than the others. So four out of five of the approaches to the topics are amenable to behavioral analysis so that 80% of the course content should be able to be translated into behavioral instructional objectives.

For instance, at the completion of a course in library administration the student could be expected to be able to <u>do</u> such things as:

> Prepare publicity releases for television broadcast;
>
> Plan and draw up the statement of program for a new library building;
>
> Given a blueprint of a library building, answer such questions as: what is the capacity of the building?, how many elevator shafts does the building have?;
>
> Prepare the documents required for a library's budget using the program program planning and budgeting system: the program structure, program memoranda, special analytical studies, program and financial plans;

> Write the final draft of a library's annual report given the reports filed by department heads;
>
> Given the decision to automate one of the library's functions, communicate that decision to the staff members to be directly affected by the change;
>
> Given the decision to automate one of the library's functions, communicate that decision to the computer technology and data processing and systems analysis personnel who will implement the change.

And so on and so on. This very brief list of behavioral objectives makes the point that library administrators do or perform numerous tasks and so these can be captured in behavioral instructional objectives.

So far this discussion about behavioral instructional objectives for courses in library administration has dealt solely with the specification of the terminal behavior to be achieved. The question now arises: what of the kinds of learning by the behavioral objectives of instruction in library administration at the graduate level? The matter of the kinds of learning is more problematic. Of the eight kinds of learning identified by Gagne,[32] only three of them are of real interest to those designing graduate courses aimed at professionalism. These kinds of learning are: 1) concept learning, 2) principle learning, and 3) problem solving. But these are precisely those that receive the briefest and least satisfactory treatment by Gagne. Moreover, Gagne discusses them only in the context of teaching arithmetic to elementary school pupils. What this means, then, is that the most

---

[32]Briggs, p. 42.

prudent course for researchers applying Mager's and Gagne's theories to graduate courses in library administration to follow is to formulate objectives in such a manner that case method and simulation techniques can be used as instructional methods.[33] In other words, since little is known about what people do when they solve problems by using concepts and principles learned, objectives should be formulated in such a way that the emphasis is on the kind of learning and the teaching method. To return to the example used in Chapter II concerning learning the principle of span of control, Form C of the objective stresses the case study method. Once again, here is Form C:

> Given two case studies, only one in which the principle of span of control is applicable, the student must be able to identify the case in which the principle is applicable, and to state how it could be applied to resolve the problem presented, and to explain why the principle is irrelevant in the other case.

But notice that now the chief problem calling for the researcher's greatest ingenuity is shifted away from the specification of objectives; what is crucial now is the development of suitable case studies, certainly a very rare commodity.

It would seem, then, that the more advanced the course, the greater reliance there should be upon case methods and simulation techniques. For the crux of professionalism is the ability

---

[33]See: James W. Ramey, "Simulation in Library Administration," Journal of Education for Librarianship, VIII(Fall, 1967), 85-93 and Elizabeth Stone, "Methods and Materials for Teaching Library Administration," Journal of Education for Librarianship, VI (Summer, 1965), 34-42.

to solve problems in novel, unpredicted situations. Accordingly, in the design and construction of library administration courses aimed at professionalism the main thrust should be in the direction of creating good case studies and simulating problem solving situations. Hence, as the level of the course is raised, it may be the case that the number of behavioral objectives will be significantly decreased. A few statements of the form:

> "Be able to solve problems in _____ presented in case studies or in simulated format"

might suffice.

In other words, a great deal depends upon the background preparation the students bring to the course. For those less well prepared students, it will be necessary to specify many, many behavioral instructional objectives emphasizing terminal behavior. For the advanced students on the brink of professional status, the number of objectives specified will be far smaller because the main emphasis will be on the application of concepts and principles in problem solving.

Perhaps now is the time to take up the matter of teaching human relations in relation to library administration. First of all, it seems that the tremendously important but little (as yet) understood terrain covered by the term human relations should be handled by a theory more sophisticated than Mager's rather crude form of behavioralism. For that reason it was recommended earlier that not all of the topics in library administration should be cast in the form of behavioral objectives. To elaborate on the

theme: it is not at all clear that human beings are "doing" anything tangible or specifiable when relating to one another. And since precious little of any profundity has been published on the relationship between human relations and administration,[34] it would perhaps be prudent to exclude human relations from the behavioral objectives for courses in library administration. This does not mean that courses should not be offered in human relations in library administration. On the contrary, what it does mean is that human relations would be presented as a topic to be covered without further specification in behavioral terms. That is, human relations would be announced as a topic to be studied. To do more at this time would be very, very - perhaps too - ambitious, given the present state of ignorance concerning human relations.

These serious reservations about behavioralism should not be interpreted to mean that behavioralism is wrong as a theory of human psychology. It might be wiser instead to say that the views presented above recognize the fundamental inadequacy of behavioralism as now elaborated. Behavioralism, in short, is not a comprehensive theory of human psychology and, therefore, needs to be supplemented.

---

[34]The discipline known as industrial psychology holds out considerable promise as a pioneering field in the study of the relationship between human relations and administration. As yet it is still inchoate.

SUMMARY

The twofold purpose of this report has been to bridge the communication gap between educational researchers and those at work designing library administration courses for the continuing education of librarians, and to discuss the problems that arise when educational research findings are applied to library education.

If this report has succeeded in driving home any conclusion at all, it has been this: the research findings published by Mager, Gagne, Smith, Lindvall and others do have very timely application in the sphere of continuing education for librarians. It was found that 80% of the subject matter in the library administration core curriculum can be cast in the form of behavioral instructional objectives.

Even though the theory of behavioral instructional objectives is applicable in the design of library administration courses, it does, on the other hand, give rise to a number of problems when so applied. Chief among these is that the theory of behavioral instructional objectives has been elaborated by pedagogues so that the theory is not, understandably, uniformly applicable to adult education.

The problems that have been identified in this connection are:

1) The kinds of learning (concept learning, principle learning and problem solving) required at the graduate level are not readily further analyzable into behavioral terms so that the number of objectives specifiable is reduced in proportion to the emphasis on problem solving;
2) The teaching methods that contribute the most toward the kinds of learning listed in (1) are case method studies and simulation. However, these methods require time consuming and elaborate preparation;
3) The critical factor in determining how much emphasis to place on problem solving and the level of difficulty of the problems to be solved is the background that the student has already acquired. The problem will be compounded in larger classes where there may be wide variation among students;
4) It is not yet clear in what way topics in human relations per se can be formulated in behavioral terms.

In conclusion, it can be said that the application of the theory of behavioral instructional objectives to adult learners by those developing graduate library administration courses might well lead to a significant modification and broadening of the scope of the theory as it now stands. In other words, library school educators have an opportunity to make a significant contribution to the theory of behavioral instructional objectives. The field of library education, moreover, stands to benefit and profit from the application of the theory of behavioral

instructional objectives to library administration courses. That is, application of the theory to library administration courses will stimulate at the more advanced levels of instruction, where problem solving is emphasized, the production of highly valuable though highly scarce (to date) teaching materials, namely, case studies and simulation studies.

BIBLIOGRAPHY

Anderson, Richard C., and others. Current Research on Instruction. Englewood Cliffs, N.J.: Prentice-Hall, 1969.

Asheim, Lester E. "Education for Librarianship," Library Quarterly, XXV (January, 1955), 76-90.

Barzun, Jacques. "The New Librarian to the Rescue," Library Journal, XCIV (November, 1969), 3963-3965.

Belzer, Jack. "Information Science Education: Curriculum Development and Evaluation," American Documentation, XX (October, 1969), 323-376.

Blaney, John P., and McKie, Douglas. "Knowledge of Conference Objectives and Effect Upon Learning," Adult Education Journal, XIX (February, 1969), 98-105.

Bloom, B. S. and others. The Taxonomy of Educational Objectives: Cognitive Domain. New York: KcKay, 1956.

Boaz, Martha. "Continuing Education," Drexel Library Quarterly, III (April, 1967), 151-157.

Bone, Larry E., ed. Library Education: An International Survey. Champaign, Ill.: University of Illinois, 1968.

Boyd, Robert D. "General Principles of Teaching at the University Level," Library Education: An International Survey. Edited by Larry E. Bone. Champaign, Ill.: University of Illinois, 1968.

Briggs, Leslie J. and others. Instructional Media: A Procedure For the Design of Multi-Media Instruction. Pittsburgh: American Institute For Research, 1967.

Briggs, Leslie J.; Gagne, Robert M.; and May, Mark A. "A Procedure for Choosing Media for Instruction," Instructional Media: A Procedure for the Design of Multi-Media Instruction. Edited by Leslie J. Briggs. Pittsburgh: American Institutes for Research, 1967.

Bundy, Mary Lee. "On Library Education," Maryland Libraries, XXXII (Spring, 1966), 22-24.

Byrd, Cecil K. "School For Administrators: The Rutgers Carnegie Project," College and Research Libraries, XX (March, 1959), 130-133, 153.

Carnovsky, Leon. "Changing Patterns in Librarianship," Wilson Library Bulletin, XLI (January, 1967), 484-491.

Carson, Lettie G. "Remarks at ALTA Meeting, Region VII." Paper delivered at the American Library Trustee Association Annual Conference, San Francisco, California, June 25, 1967. (Mimeographed)

Cook, Desmond L. Better Project Planning and Control Through the Use of Systems Analysis and Management Techniques. Paper delivered at the Center For Educational Statistics, Washington, D.C., November 20-22, 1967. Washington, D.C.: Symposium on Operations Analysis of Education, November 20, 1967. ERIC ED 019 729.

_____. The Impact of Systems Analysis on Education. Columbus, Ohio: Ohio State University, Educational Research Management Center, April 18, 1968. ERIC ED 024 145.

_____. The Use of Systems Analysis and Management Techniques in Program Planning and Evaluation. Paper delivered at the Symposium on the Application of Systems Analysis and Management Techniques to Educational Planning in California, Orange, California, June 12-13, 1967. ERIC ED 019 752.

Cummings, Roy J. "Removing Intuition From Course Development," Training and Development Journal, January, 1968, pp. 18-27.

De Prospo, Ernest R. "Contributions of the Political Scientist and Public Administrator to Library Administration," Administration and Change: Continuing Education in Library Administration. Edited by Neal Harlow. New Brunswick, N.J.: Rutgers University Press, 1969.

_____, and Huang, Theodore S. "Continuing Education for the Library Administrator: His Needs," Administration and Change: Continuing Education in Library Administration. Edited by Neal Harlow. New Brunswick, N.J.: Rutgers University Press, 1969.

Flexner, Abraham. "Is Social Work a Profession?" School and Society, I (June, 1915).

Gagne, Robert M. The Conditions of Learning. New York: Holt, Rinehart and Winston, 1965.

_____. "The Implications of Instructional Objectives For Learning," Defining Educational Objectives. Edited by C. M. Lindvall. Pittsburgh: University of Pittsburgh Press, 1964.

_____. "A Systems Approach to Adult Learning," Psychological Research in Classroom Learning. Edited by K. Weintage. St. Louis: Washington University, 1967.

_____, and Bolles, R. C. "A Review of Factors in Learning Efficiency," Automatic Teaching. Edited by Eugene Galanter. New York: Wiley, 1959.

Galanter, Eugene, ed. Automatic Teaching. New York: Wiley, 1959.

Gleaves, E. S. "More Room at the Top: Librarianship in the Light of Asheim's Proposed Restructure," Southeastern Librarian, XIX (Summer 1969), 64-69.

Goldstein, Harold. "The Importance of Newer Media in Library Training and the Education of Professional Personnel," Library Trends, XVI (October, 1967), 259-265.

Gore, Daniel. "The Mismanagement of College Libraries," AAUP Bulletin, LII (March, 1966), 46-51.

Graduate School of U.S. Department of Agriculture. Faculty Handbook, Part II, Improving Teaching. Washington, D.C.: Department of Agriculture Graduate Schools, 1967. ERIC ED 024 854.

Hall, Anna C. Selected Educational Objectives For Public Service Librarians: A Taxonomic Approach. Pittsburgh: University of Pittsburgh Press, 1968.

Harlow Neal, ed. and others. Administration and Change: Continuing Education in Library Administration. New Brunswick, N.J.: Rutgers University Press, 1969.

_____. "News of the New Founde Worlde," Library Journal, LXXXVIII (June, 1963), 2189-2193.

Holton, Gerald; Watson, Fletcher; Rutherford, James F. Harvard Physics Report. Papers delivered at the American Association of Physics Teachers Meeting, February, 1967. Cambridge, Mass.: Harvard Physics Project, 1967. ERIC ED 020 117.

Houle, Cyril O. "The Role of Continuing Education in Current Professional Development," ALA Bulletin, LXI (March, 1967), 259-267.

Howard, Paul. "The Functions of Library Management," Library Quarterly, X (1940), 313-349.

Hughes, Everett C. "Education For A Profession," Library Quarterly, XXXI (October, 1961), 336-343.

Katz, Robert C. "Skills of an Effective Administrator," Harvard Business Review, XXXIII (January-February, 1955), 33-42.

Knezevich, S. J. The Systems Approach to School Administration: Some Perceptions on the State of the Art in 1967. Paper delivered at the U.S. Office of Education Symposium on Operations Analysis of Education, November, 1967. ERIC ED 025 853.

Knight, Douglas M. and Nourse, E. Shepley, eds. Libraries at Large: Tradition, Innovation, and the National Interest. New York: Bowker, 1969.

Kortendick, James J. "Continuing Education and Library Administration, ALA Bulletin, LXI (March, 1967), 268-271.

_____. "Curriculum: Administration," Drexel Library Quarterly, III (January, 1967), 92-103.

_____, and Stone, Elizabeth W. "Highlights of a Study on Federal Librarians and Post-MLS Education: A Preliminary Report," DC Libraries, XL (Fall, 1969), 71-76.

_____. Post-Master's Education For Middle and Upper Level Personnel in Libraries and Information Centers. Final Report, Phase I. To be published by American Library Association in 1970.

Krathwohl, David R. "The Taxonomy of Educational Objectives: Its Use in Curriculum Building," Defining Educational Objectives. Edited by C. M. Lindvall. Pittsburgh: University of Pittsburgh Press, 1964.

Lee, Calvin B. T., ed. Improving College Teaching. Washington, D.C.: American Council on Education, 1967.

Leigh, Robert D., ed. Major Problems in the Education of Librarians. New York: Columbia University Press, 1954.

Lindvall, C. M., ed. Defining Educational Objectives. Pittsburgh: University of Pittsburgh Press, 1964.

_____, and others. "The Importance of Specific Objectives in Curriculum Development," Defining Educational Objectives. Edited by C. M. Lindvall. Pittsburgh: University of Pittsburgh Press, 1964.

Mager, Robert F. Developing Attitude Toward Learning. Palo Alto, California: Fearon Press, 1968.

_____. Preparing Instructional Objectives. Palo Alto, California: Fearon Press, 1962.

Martin, Lowell A. "Shall Library Schools Teach Administration?" College and Research Libraries, VI (September, 1945), 335-340.

Mead, Margaret. "Redefinition of Education," National Education Association Journal, XLVIII (October, 1959), 15-17.

Melching, William H., and others. Deriving, Specifying and Using Instructional Objectives. Alexandria, Virginia: The Human Resources Research Office, George Washington University, 1966.

Ofeish, Gabriel D. "The New Education and the Learning Industry," Educational Leadership, XXVI (May, 1969), 760-763.

Orne, Jerrold. "Library Education: What's Missing?" Journal of Education For Librarianship, V (Fall 1964), 90-91.

Piele, Philip. Planning Systems in Education. Eugene, Oregon: Oregon University, 1969. ERIC ED 025 855.

Ramey, James W. "Simulation in Library Administration," Journal of Education For Librarianship, VIII (Fall, 1967), 85-93.

Ready, William B. "The Rutgers Seminar For Library Administrators," College and Research Libraries, XVIII, (October, 1957), 281-283.

Reisman, J. A., ed. Engineering: A Look Inward and a Reach Outward. Madison, Wisconsin: University of Wisconsin, 1967.

Roethlisberger, F. J. "Training Supervisors in Human Relations," Harvard Business Review, XXIX (September, 1951), 47-57.

Rothstein, Samuel. "Nobody's Baby: A Brief Sermon on Continuing Professional Education," Library Journal, XC (May, 1965), 2226-2227.

Schultz, Claire. "Things They Don't Teach in Library School," Special Libraries, LIV (October, 1963), 513-514.

Sellers, Rose Z. "A Different Drummer: Thoughts on Library Education," Journal of Education For Librarianship, VI (Winter, 1966), 151-166.

Sharify, Nasser. "The Need For Change in Present Library Science Curricula," Library Education: An International Sruvey. Edited by Larry E. Bone. Champaign, Ill.: University of Illinois, 1968.

Smith, Robert G. The Development of Training Objectives. Alexandria, Virginia: Human Resources Research Office, George Washington University, 1964.

Stone, Elizabeth W. "Continuing Education in Librarianship: Ideas For Action," American Libraries, I (June, 1970), 543-551.

_____. "Continuing Education: Avenue to Adventure," School Libraries, XVIII (Summer, 1969), 37-46.

_____. Factors Related to the Professional Development of Librarians. Metuchen, N.J.: Scarecrow Press, 1969.

_____. "Methods and Materials For Teaching Library Administration," Journal of Education For Librarianship, VI (Summer, 1965), 34-42.

_____. Training For the Improvement of Library Administration. Ann Arbor, Michigan: Edwards Bros., 1967.

Taft, Martin I. "Design For Education: A Systems Approach," Engineering: A Look Inward and a Reach Outward. Edited by J. A. Reisman. Madison, Wisconsin: University of Wisconsin, 1967.

Tyler, Ralph Winfred and others. Perspectives of Curriculum Evaluation. Chicago: Rand McNally, 1967.

Tyler, Ralph W. "Some Persistent Questions on the Defining of Objectives," Defining Educational Objectives. Edited by C. M. Lindvall. Pittsburgh: University of Pittsburgh Press, 1964.

Wasserman, Paul. "Development of Administration in Library Service: Current Status and Future Prospects," College and Research Libraries, XIX (July, 1958), 283-294.

_____. Toward a Methodology For the Formulation of Objectives in Public Libraries: An Empirical Analysis. Ann Arbor, Michigan: University of Michigan, 1961. (Unpublished doctoral dissertation)

"What's Wrong With Library Schools?" Library Journal, XCI (April, 1966), 1773-1775.

Wight, Edward A. "Standards and Stature in Librarianship," ALA Bulletin, LV (November, 1961), 871-875.